

have observed in my synopsis of the group (P. Z. S. 1856, p. 243), rather abnormal, having the bill less compressed and more nearly resembling that of a typical *Tanagra*.

XXXIX.—*Notes on the Birds of Spitsbergen.* By ALFRED
NEWTON, M.A., F.L.S., &c.

[Concluded from page 219.]

SPITSBERGEN is one of those countries which has long shared the questionable privilege of being accounted the home of various birds which are either extremely rare, or have their summer retreats little known. Some of my oological readers cannot fail to have had misgivings, and these not always slight ones, that certain of their high-priced egg-treasures may not after all have been brought from the distant region which their vendors assigned to them as the land of their birth. Many such readers, I am afraid, will derive little comfort from the perusal of the latter part of these notes: but I feel sure there will be others sufficiently stout-hearted to discard at once from their collections the reputed eggs of the Knot, the Grey Plover, and I know not how many more birds, when they now find there is no reason to believe that any of these species frequent Spitsbergen. That the ornithological exploration of the country is far from being complete I of course freely admit; but at the same time it will be seen from the following catalogue of the birds hitherto observed there, that a good deal has been done towards getting an accurate knowledge of its *Ornis*, and especially with regard to the species which actually breed within its limits.

The earliest account of the ornithology of Spitsbergen with which I am acquainted is that contained in the Voyage of Frederick Marten or Martens (for I find the name spelled in both ways). This is one of those delightful old books which one cannot take up without feeling revived and invigorated by the freshness and originality of its quaint sentences. It is, of course, not free from ridiculous blunders which every school-boy in these days could detect; but the errors and absurdities have a charm of their own, and they are all those proper to the prehistoric age, so to speak, of natural science, while the infor-

mation with which they are mixed up is nearly always curious and often valuable. Of this work I have not seen the original edition, published, I believe, at Hamburg in 1675; but there is an English translation of a date not many years later now lying before me*. Seventeen species of birds are described by the author. Thirteen of them are figured by him in his plates; and these, with one more, are recognizable enough. The remaining three are the "Ice-bird" (p. 74), "John of Ghent" (p. 97), and "a Black Crow" (p. 98). The first is probably the Ptarmigan of the country, and the last may have been a *Stercorarius* in whole-coloured plumage. With regard to the second, which the Dutch now call by the same name, it must be remarked that Marten really does not include "John of Ghent" as a bird of Spitsbergen—saying that "when he cometh to the ice he turns back again"†.

Nearly a century later Commodore Phipps (afterwards Lord Mulgrave), in an appendix to the narrative of his voyage, gave a list of the twelve species of birds observed by him in Spitsbergen‡. One of these (though, as it would seem from further investigation, miscalled) is not included by Marten; but all the rest can be referred to that voyager's descriptions. "*Larus eburneus*," however, for the first time receives scientific recognition, not having been noticed by previous systematic authors.

* An Account of several late Voyages & Discoveries to the South and North. Towards the Streights of *Magellan*, the *South Seas*, the vast Tracts of Land beyond *Hollandia Nova*, &c. Also Towards *Nova Zembla*, *Greenland* or *Spitsberg*, *Groynland* or *Engronddland*, &c. By Sir John Narborough, Captain Jasmen Tasman, Captain John Wood, and Frederick Marten of *Hamburgh*. London: 1694.

† The Gannet is of only occasional occurrence in the Norwegian seas (Wallengren, 'Naumannia,' 1854, p. 281). According to Herr Malm (Kroyer's *Tidsskrift*, 2 ser., i. p. 211), it appears in the winter on the coast of the Arctic Ocean; but this assertion receives no support from Pastor Sommerfelt (Cefvers. K. Vet.-Akad. Förh. 1861, pp. 67-90). The statements of Yarrell, that it "is found in the Baltic, as high as the Gulf of Bothnia" (B. B. iii. p. 384), and of Degland that it is "common on the coast of Norway" (Orn. Eur. ii. p. 384), are incorrect.

‡ A Voyage towards the North Pole undertaken by His Majesty's command, 1773. By Constantine John Phipps. London: 1774. App. pp. 186-189.

Scoresby is the next author who treats of the ornithology of Spitsbergen. In his excellent work* he enumerates seventeen species as forming its avifauna; but several of them are misnamed, and especially two—his "*Fringilla linaria*" being probably, as Dr. Malmgren suggests (*op. cit.* p. 88) the young of the Snow-Bunting, and his "*Tringa hypoleucos*," with equal likelihood, the Purple Sandpiper. His "*Larus crepidatus*" is of course one of the *Stercorarii*; but which species, it is not easy to determine.

To the narrative of Parry's ever memorable fourth voyage Sir James Ross contributed an Appendix on the Ornithology of Spitsbergen†, giving twenty-one species of birds as found there. Probably only one of these (*Charadrius hiaticula*) is a real addition to the avifauna of the country as given by Scoresby. Of the other three not a trace has been found by later explorers.

Almost simultaneously with Parry's departure from the northern shores of Spitsbergen, Keilhau arrived at the southern. This distinguished geologist mentions‡ eleven species of birds as occurring there. In his determination of one of them, *Larus marinus*, he is certainly wrong; and I hesitate much to accept his statement respecting another, *Charadrius morinellus*, an example of which he says he found lying dead on the roof of a hut at the entrance of the Stor Fjord.

In 1843 was published Admiral Beechey's account of Captain Buchan's voyage of 1818, referred to in the earlier portion of this paper. There are not many ornithological facts to be gathered from the work. *Somateria spectabilis* § is noticed (p. 100) as breeding on the islets in Fair Haven, but it is clear

* An Account of the Arctic Regions, &c. By William Scoresby, Jun., F.R.S.E. Edinburgh: 1820. Vol. i. pp. 527-538.

† Narrative of an attempt to reach the North Pole, &c., in the year 1827, under the Command of Captain William Edward Parry, R.N., F.R.S., &c. London: 1828. App. pp. 193-198.

‡ Reise i Øst- og Vest-Finmarken samt til Beeren-Eiland og Spitsbergen, i Aarene 1827 og 1828. Af B. M. Keilhau. Christiania: 1831, p. 163.

§ This species was said by Temminck, in 1820 (*Man. d'Orn.*, 2 ed., p. 852), to be abundant in Spitsbergen; and the statement has been copied by many other writers. On what authority it was made, I know not.

he did not know the difference between that bird and *S. mollissima*.

The next published addition to the Spitsbergen *Ornis* is that of *Phalaropus fulicarius* by Mr. Wolley, who in his 'Catalogue of Eggs,' printed in 1856 (p. 17), mentions "a dried specimen" brought thence—a specimen, I may mention, which is now in my possession. In his 'Catalogue' of two years later (p. 18) he added respecting this bird, that he had "ascertained that it breeds" in that country. This information was, I believe, procured from Herr Andreas Berger (then of Hammerfest, and now or lately in the naval service of the United States of America), a most intelligent man, who had made many voyages to Spitsbergen.

Mr. Edward Evans and Mr. Wilson Sturge, in the summer of 1855, visited the west coast of Spitsbergen; and the first volume of the former series of this Journal contains an interesting notice of the birds they met with there. Among them was a large species of Goose (Ibis, 1859, pp. 171, 172) which they found breeding in Ice Sound, and inclined to believe was *Anser ferus*, but they unfortunately neglected to bring back any specimens of it. They also obtained several examples of the Ptarmigan of the country, one of which—and the only one they preserved—was subsequently characterized as new by Mr. Gould (P. Z. S. 1858, p. 354) as *Lagopus hemileucurus*.

In 1858 Professor Torell formed one of the scientific expedition organized by the Swedish Academy for the laborious survey which I have before mentioned, and on his return he published an account of the *Mollusca* of Spitsbergen*. In this he also gives a list of the birds of that country, containing two species not hitherto announced as belonging to it, namely, *Anser leucopsis* and *Harelda glacialis*†; but, as we are informed by

* Bidrag till Spitsbergens Molluskfauna, &c. Af Otto Torell, Filos. Mag., Med. Kandid. Stockholm: 1859, pp. 47–65. I am indebted to the kindness of my friend, Mr. Gwyn Jeffreys, for an opportunity of consulting this publication.

† Temminck assigned Spitsbergen as a breeding-station for this species in 1815 (Man. d'Orn. ed. 1, p. 560). So many of the localities he gives for birds are incorrect, that I have much pleasure in mentioning this and the former instance of his statements being corroborated by later observers.

Dr. Malmgren, this last had been found in Spitsbergen in 1837 by Professor Lovén, and again in the following year by Professor Sundevall, who accompanied the French Northern Scientific Expedition to Bell Sound. And here I may mention that, though a long series of volumes recording the valuable observations made by the various *savans* who sailed on board the 'Recherche' have been published, I have not been so fortunate as to meet with anything relating to the ornithology of the countries visited by them, except that in the 'Atlas' of plates published by M. Gaimard, the President of the "Commission Scientifique du Nord," half-a-dozen figures of birds, from Spitsbergen specimens, are included. These shall all be referred to under their proper heads.

I have already recorded my opinion (p. 200) of Dr. Malmgren's valuable 'Notes on the Bird-Fauna of Spitsbergen,' published in 1863, and I need not here repeat it. He has since kindly presented me with a copy of the supplementary observations which his voyage last year enabled him to make, and the results of which he published immediately on his return to Sweden*. These are characterized by the same carefulness that distinguished his former article, and the author has naturally taken the opportunity of correcting most of the few errors which that contained. In the first of his papers he adds to the list, which can be compiled from preceding authorities on the subject, four birds, *Anser segetum*, *Falco gyrfalco*, *Strix nyctea*, and a species of *Cygnus*. The Goose, as I have already stated (P. Z. S. 1864, p. 498), was in truth *Anser brachyrhynchus*; but the principal feature of Dr. Malmgren's researches is that he destroys the claims of no less than seven species, which had been proffered by former writers. Some of these I have in the last few pages particularized; to the others I shall allude as I go on. In his second paper he adds, chiefly on my authority (for I had communicated to him the fact of a *Stercorarius pomatorhinus* having been recognized by my friends in Sassen Bay), one species, and omits two others which he had previously included. Thus, according to Dr. Malmgren, the entire number known in Spits-

* Nya anteckningar till Spetsbergens fogelfauna. Af A. J. Malmgren. Cefversigt af Kongl. Vetenskaps-Akademiens Förhandlingar, 1864, p. 377.

bergen is twenty-seven, of which four are but stragglers, and the remaining twenty-three really inhabitants, one only being, so far as we dare presume, a resident throughout the year.

I do not think it necessary that I should give any more general description of this country than I have already done. I should have to copy the chief part of it from my friend's admirable paper, which those who are most interested in the matter will find, as I before stated, accessible to them at full length in the pages of the 'Journal für Ornithologie'*. I therefore proceed at once to enumerate and remark upon the birds of Spitsbergen.

1. *FALCO*, sp.? "*Falco gyrfalco* (Linn.)," Malmgren, 1863, *op. cit.* p. 113; *Id.*, 1864, p. 411.

Dr. Malmgren mentions that on two occasions a large Falcon was observed by some members of his party. This he ascribes to *Falco gyrfalco*, though it seems to me it might just as well have been either of its cognates *F. candicans* or *F. islandicus*. I have therefore declined to give it a specific name. The first time the bird was seen, it was by Petersen (the Greenlander so well known as having taken part in many of the Franklin-searching expeditions), on the occasion of a reindeer-hunt in Wide Bay, on the 4th June, 1861, and the observation was confirmed by the harpooner. The second occurrence was in Treurenberg Bay a few days later. I can find no other record of the appearance of any of the *Falconidæ* in Spitsbergen.

2. *NYCTEA NIVEA* (Daud.). *Stryx nyctea*, Malmgren, 1863, p. 114; *Id.*, 1864, p. 411.

It is stated by Dr. Malmgren that an example of this species was shot on a piece of floating ice between Verlegen Hook and Shoal Point, 10th July, 1861, probably attracted thither by the bodies of some recently killed walruses; for it has long been known, on Wrangel's authority, that the Snowy Owl is at times a carrion-eater. Three days afterwards the specimen was presented to the Swedish expedition, and it is now in the

* A translation of the "Nya anteckningar," also from the pen of Dr. Frisch, is appearing in that journal for the present year; the first part of it in the *Hef*t for May, pp. 192-216; and the continuation is promised.

National Museum at Stockholm. Whether this bird is more than an accidental straggler to Spitsbergen may be doubted, since the entire absence from that country of any *Rodentia*, which commonly form its prey, must make its means of subsistence there precarious. This is the only recorded instance of the Snowy Owl having been met with in Spitsbergen; but Stabbel, our pilot, told me he had known of its occurrence there previously,—I think he said, on the eastern coast.

3. *PLECTROPHANES NIVALIS* (L.), Evans and Sturge, *op. cit.* p. 170; Torell, *op. cit.* p. 49; Malmgren, 1864, p. 379. "Snow-bird," Marten, *op. cit.* p. 73, tab. K. fig. b. *Emberiza nivalis*, Phipps, *op. cit.* p. 188; Scoresby, *op. cit.* i. p. 537; Ross, *op. cit.* p. 193; Keilhau, *op. cit.* p. 163; Malmgren, 1863, p. 99. *Fringilla flammea* and *F. linaria*, Scoresby, i. pp. 131 and 537?

I have already mentioned the discovery of two nests of this species beneath the Alkenborn, and that a family-party were observed on Russö. Dr. Malmgren states that when at sea in the latitude of Bear Island, on the 19th of May, in his first voyage, the rigging of the vessel was suddenly covered by a flock of Snow-Buntings, which did not stay to rest very long, but continued their course towards Spitsbergen, against a stormy wind. This bird appears to extend its range to the furthest north of the country, he having found a brood of newly-fledged young in Brandywine Bay (lat. 80° 24' N.). The specimens I obtained seemed to be of the Old-World type; that is to say, they are not quite so large or so stoutly-built as those I have from Greenland and America. If the *Fringilla flammea* or *F. linaria* of Scoresby be not this species, I am at a loss what to make of it; for certainly it is extremely unlikely that a species of Redpoll should resort to a country so entirely destitute of anything that can be called a tree or shrub as Spitsbergen is.

4. *LAGOPUS HEMILEUCURUS*, Gould, P. Z. S. 1858, p. 354; Evans and Sturge, pp. 169, 170; A. Newton, P.Z.S. 1864, p. 498. "Ice-bird," Marten, p. 74? *Tetrao lagopus*, Ross, p. 193. *Lagopus alpina* var. *hyperborea*, Gaimard, Voyages en Scandinavie, Atlas, livr. xxxviii. pl.—(*descr. nulla*). *Lagopus mutus*, G. R. Gray, List B. Brit. Mus. (1844) pt. iii. p. 48, exempl. l.

Tetrao alpinus, pt., Torell, p. 51. *Lagopus hyperborea*, Malmgren, 1863, p. 100. "*Lagopus alpinus*, v. *hyperborea*, Sundevall," *Id.*, 1864, p. 379.

Whether this bird be specifically distinct from the Ptarmigans of Iceland, Greenland, and Arctic America is a question that I will not, in the absence of sufficient materials, attempt to decide. The Ptarmigans from those countries are probably identical; and if so, the specific name *rupestris*, as being the oldest, should be applied to them. I am, however, very confident that the present bird resembles them more closely than it does that of Europe proper. I do not attribute much importance to the larger size of the hyperborean bird, or even to its eponymic character—the having the rectrices partly white; but the breast of the male (so far as I can judge from the specimen of that sex which was kindly shown me by Dr. Malmgren, and since described at length by him, and also from Herr von Wright's figure in the Atlas of the French Expedition) does not seem to have any of the entirely black feathers which are so distinctive of the real *L. mutus*. It is true that the last-named bird in Scotland never appears to assume the perfectly sable breast which is sometimes reached by the Norwegian "Fjäll-rype," such as is so beautifully represented by Mr. Wolf in Mr. Gould's 'Birds of Great Britain;' but Scotch birds killed at the proper time of year invariably, so far as I know, have some entirely black feathers on the breast, while specimens obtained at the corresponding season from North America, Greenland, Iceland, and I believe I may now add Spitsbergen, have not a single coloured feather which is not mottled with ashy-brown.

The Ptarmigan in Spitsbergen is not a common bird, though it has been met with in several localities on the north and west coasts. Marten found his "Ice-bird" (if that is to be referred to this species) on the shore of English Bay, where Lord Dufferin ('Letters from High Latitudes,' p. 316) subsequently mentions his having met with "two or three dozen" and killing sixteen. Parry's party found it in Hecla Cove. Professor Sundevall, who accompanied the French Expedition of 1838, obtained the example which was the subject of Herr von Wright's figure, and is now in the Stockholm Museum, in Bell Sound.

Messrs. Evans and Sturge describe it as being, in 1855, rather numerous and breeding in Coal Bay, where my companions last year searched for it in vain. Dr. Malmgren in his former voyage found it in Wide Bay, Brandywine Bay, and Loom Bay, and, as I have before mentioned, obtained the specimen I saw with him far up the North Fjord of Ice Sound.

One of the two eggs from the only nest found by Messrs. Evans and Sturge was kindly presented to me. It is rather small for the general size of the bird when compared with others of the genus, measuring 1.65 inch by 1.22, but of course is thoroughly lagopodine in character. I do not think that any other eggs of the bird have been brought from Spitsbergen.

As this Ptarmigan has been described as a distinct species, and I cannot positively prove, however strongly I may believe, that it is identical with *L. rupestris*, I have no alternative here but to consider it to have been properly separated, and I accordingly retain for it the specific name applied to it by Mr. Gould. That bestowed upon it in the French work cited, though adopted by Dr. Malmgren, must, I think, be disallowed. In the first place the figure is, so far as I am aware, unaccompanied by any description; and secondly, it was only regarded by the anonymous authority (whoever he may have been) who superintended the lettering of the plate as *a variety* of "*Lagopus alpina*." Consequently there is no law, in any recognized code of nomenclature that I am acquainted with, by virtue of which the name "*hyperboreus*" should stand as *specific*.

5. *ÆGIALITES HIATICULA* (L.), Malmgren, 1864, p. 384. *Charadrius hiaticula*, Ross, p. 193; Torell, p. 56; Malmgren, 1863, p. 100. *C. morinellus*, Keilhau, p. 163?

Sir James Ross states that a bird of this species was killed by Mr. M'Cormick in Hecla Cove; and it may be inferred from what he says that General Sabine also obtained a specimen in Spitsbergen. Dr. Malmgren mentions that Professors Torell and Nordenskjöld found on one of the Seven Islands in lat. 80° 45' N., a brood of Ringed Plovers, which had probably been bred on one of these, the most northern islets of the known world. An old bird was killed from it, and is now in the Stockholm Museum. He also states that this species is known to the

Norwegian sailors by the name of "Ringel." It was not observed by any of our party, nor seen last year by the Swedish Expedition.

Keilhau mentions a "Brokfugl * (Char. morinellus) " which he found dead on the roof of an old Russian hut in Stans Foreland; but he was no ornithologist, and I incline to believe with Dr. Malmgren (1864, p. 412) that the bird was very possibly a Ringed Plover.

? 6. STREPSILAS INTERPRES (L.).

I have already referred to an example of what was, I believe, a Turnstone seen by myself in Advent Bay on the 13th July last year; and though I admit that the principle of including in a local list any species which has not been actually procured is faulty, yet I think I can hardly in this case have been mistaken, the more so as, the very same day, Dr. Malmgren told me he was nearly sure he had also recently observed this species in the upper part of Ice Sound.

7. TRINGA MARITIMA (L.); Ross, p. 194; Gaimard, Voy. en Scand., Atlas, livr. ii. pl. —. fig. 1; Evans and Sturge, p. 171; Torell, p. 54; Malmgren, 1863, p. 101; *Id.*, 1864, p. 384. "Snite," Marten, p. 72, tab. K. fig. a. *T. hypoleucos*, Scoresby, i. p. 537?

This bird appears to be tolerably numerous along the coast as far north as Brandywine Bay. I am indebted to Messrs. Evans and Sturge for specimens of its eggs, which they obtained in Coal Bay in 1855: We were too late to procure any. Dr. Malmgren, on his former voyage, observed a flock on the shore of Kobbe Bay so early as the 28th May; last year he saw it in the interior of the Stor Fiord, and also met with it on Bear Island.

8. PHALAROPUS FULICARIUS (L.); Wolley, Cat. Eggs, 1855-6, p. 17; *Id.* Cat. Eggs, 1857-8, p. 18; Evans and Sturge, p. 174; Malmgren, 1863, p. 101; *Id.*, 1864, p. 384. *P. hyperboreus*, Torell, p. 54. "*P. rufus*, Sundevall," Malmgren, 1863, p. 126.

Although met with in various localities, from the extreme

* If I am not mistaken, "Brokfugl," in most parts of Norway, signifies *Charadrius pluvialis*.

south to the extreme north, and doubtless breeding in many places, the exact spots selected by this beautiful species are still unknown to me. Dr. Malmgren was as unsuccessful in his first voyage as Ludwig and I were. Last year the skipper of the Swedish exploring-vessel found a nest with four eggs up the North Fjord of the Sound at the beginning of July. The contents he put in his cap; but as he was stalking deer at the time, he forgot the treasures he was carrying, and the consequence was that they were all smashed. Later in the month Professor Dunér found a nest with three fresh eggs in Bell Sound. They lay on the ground, which consisted of small splinters of stone, without any bedding. They are now at Stockholm. Neither of the parent birds was observed by the nest. Dr. Malmgren noticed this species as far north as lat. $80^{\circ} 10'$. He states, it feeds chiefly on a species of *Nostoc*; but the stomachs of those I dissected on Russö contained many gnats and their larvæ.

9. *STERNA MACRURA*, Naum.; Evans and Sturge, p. 167; Malmgren, 1864, p. 385. "Kirmew," Marten, p. 92, tab. N. fig. *b*. *Sterna hirundo*, Phipps, p. 188. *S. arctica*, Ross, p. 194; Torell, p. 63; Malmgren, 1863, p. 101; Scoresby, p. 533; G. R. Gray, List B. Brit. Mus. (1844) pt. iii. p. 177, exempll. *g*, *h*.

The Arctic Tern is tolerably common in Spitsbergen, breeding as far as lat. 80° N., where Dr. Malmgren found it in countless numbers in July and August. In Ice Sound it was not very plentiful; but on the 15th July, Professor Nordenskjöld kindly sent me two eggs which he had himself found that day at the entrance. Among the Thousand Islands it was numerous, and the eggs are, of course, looked for by the walrus-hunters who resort thither. Old Frederick Marten mentions the excellence of their edible qualities; and the regular visitors to Spitsbergen have naturally not lost knowledge of the fact since his time, Dr. Malmgren first observed the bird between the 10th and 11th of June, in Treurenberg Bay. He states that it feeds principally on surface-swimming animals—crustaceans, mollusks, and the like. It would certainly have some difficulty to procure a sufficiency of small fish as in other countries.

10. PAGOPHILA EBURNEA (Phipps); Evans and Sturge, p. 171; Malmgren, 1864, p. 385. "Rathsher," Marten, p. 77, tab. L. fig. a. *Larus eburneus*, Phipps, p. 187; Scoresby, p. 535; Ross, p. 194; Keilhau, p. 163; Torell, p. 64; Malmgren, 1863, p. 102.

The Ivory-Gull, first scientifically described by Lord Mulgrave, is, of all others, the bird of which any visitor to Spitsbergen will carry away the keenest recollection. One can only wish that a creature so fair to look upon was not so foul a feeder. In my preceding notes, I have already several times mentioned this species, I have only now to add that, contrary to the experience of almost all other observers, I once saw an Ivory-Gull of its own accord deliberately settle on the water and swim. This was in the Stor Fjord. There is a very great variation in the size of different specimens of this bird, which is not at all to be attributed to sex or, I think, to age; but I do not for a moment countenance the belief in a second species, which some ornithologists have endeavoured to establish under the name of *P. brachytarsa*.

Some years ago I had the pleasure of announcing, at a meeting of the Zoological Society (P. Z. S., 1861, p. 401), that the Swedish Expedition to Spitsbergen in that year had obtained some eggs of this bird, the first well-authenticated specimens brought to Europe. I here transcribe what Dr. Malmgren, the fortunate finder of these examples, says about them:—

"On the 7th July, 1861, I found on the north shore of Murchison Bay, lat. 80° N., a number of Ivory-Gulls established on the side of a steep limestone precipice, some hundred feet high, in company with *Larus tridactylus* and *L. glaucus*. The last-named occupied the higher zones of the precipice. *Larus eburneus*, on the other hand, occupied the niches and clefts lower down, at a height of from fifty to a hundred feet. I could plainly see that the hen-birds were sitting on their nests; but these to me were altogether inaccessible. Circumstances did not permit me before the 30th July to make an attempt, with the help of a long rope and some necessary assistance, to get at the eggs. On the day just named, I succeeded, with the assistance of three men, in reaching two of the lowest in situation, which

each contained one egg. The nest was artless and without connexion, and consisted of a shallow depression, 8 or 9 inches broad, in loose clay and mould on a sublayer of limestone. Inside it was carelessly lined with dry plants, grass, moss, and the like, and also a few feathers. The eggs were much incubated, and already contained down-clad young. Both the hen-birds were shot upon their nests, and are now in the National Museum. The cocks were at first observable, but they vanished when we began the work of reaching their nests."

The locality just mentioned will not be found marked on any English chart. It lies at the north-eastern entrance of Hinlopen Strait, in about long. $18^{\circ} 30'$ E., and was first accurately surveyed by the Swedish Expedition. I am, however, inclined to think that the Ivory-Gull breeds sporadically on many other parts of Spitsbergen proper. Several of the examples we shot both in Ice Sound and the Stor Fjord had their bellies bared of feathers, as usual in sitting birds; but I could not learn from any of the walrus-hunters we met that they had ever discovered a breeding-place, except that our pilot told me that a ship's boat which, in 1859, succeeded in reaching Giles' Land, found many Ivory-Gulls' nests on its lonely shore. This species, like other Gulls, probably does not always breed in colonies; and as it is sure to select the most inaccessible places for that purpose, an occasional nest here and there on the mountains or crags might well escape notice. Mr. Wolley, as I remarked before the Zoological Society (P. Z. S. 1861, p. 401), was told of a breeding-place which the Quæns in their language called "Porro Vaara" (*i. e.* Reindeer Hill), but I have since ascertained that this name is often applied to a considerable portion of Spitsbergen; the information therefore is less precise than I formerly thought.

11. *RISSA TRIDACTYLA* (L.); G. R. Gray, List B. Brit. Mus. (1844), pt. iii. p. 174, exempl. *f*; Evans and Sturge, p. 169; Malmgren, 1864, p. 387. "Kutge-gehef," Marten, p. 82, tab. N. fig. *a*. *Larus rissa*, Phipps, p. 187; Scoresby, i. p. 534. *L. tridactylus*, Ross, p. 195; Torell, p. 64; Malmgren, 1863, p. 104.

This very common bird appears to frequent the whole of the

Spitsbergen coast. In Parry's Expedition it was observed feeding on *Merlangus polaris* and *Alpheus polaris* as far to the northward as they reached—lat. $82^{\circ} 45'$ N. Dr. Malmgren remarks that the Kittiwake occupies a middle station on the cliffs where the Gulls breed, and that he found their stomachs filled with *Limacina arctica* and *Clio borealis*. In his voyage last year, he found it breeding also on Bear Island.

12. *LARUS GLAUCUS*, Gm.; Scoresby, i. p. 535; Ross, p. 194; Gaimard, Voy. en Scand. Atlas, livr. x. pl. —. fig. 2 (*pullus*); G. R. Gray, List B. Brit. Mus. (1844), pt. iii. p. 168, exempl. *f*; Evans and Sturge, p. 167; Torell, p. 63; Malmgren, 1863, p. 105; *Id.* 1864, p. 389. "Burger-meister," Marten, p. 84, tab. L. fig. *c.* *Larus marinus*, Keilhau, p. 163?

Far less plentiful, according to my observation, than the preceding species, the Glaucous Gull probably ranges along the entire coast of the country. Sir James Ross states that it was abundant on the shores of Low Island, though it was not seen to the north of lat. 81° . My friends who went to the eastward from the Thousand Islands met with many young birds, half-fledged, at one spot at least; and our pilot told me it was found breeding by the boat's crew who visited Giles' Land in 1859. Dr. Malmgren reports it as doing the same in incredible numbers on Bear Island; and we saw many in that neighbourhood both going and returning. He also remarks that it chooses (and assuredly there is no other bird in Spitsbergen to dispute its choice) the highest part of the cliffs for nidification. He further found it breeding high up on the mountain-sides, apart from any other species. In Loom Bay, he also tells us, he has seen it swoop down like a Falcon on a young Dovekie, seize it in its beak, and eat it on a projecting part of the nearest rocky cliff or shore, where many skeletons bore witness to its former rapacity. I have before mentioned that I saw a Burgomaster attack a young Bruennich's Guillemot. The plate from M. Bevalet's pencil, in the 'Atlas' to the French voyage above cited, seems to represent very fairly the appearance of the nestling Glaucous Gull.

? 13. *STERCORARIUS POMATORHINUS* (Temm.). *Larus crepin.*
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datum, Scoresby, i. p. 534?; *Lestris pomarinus*, Ross, p. 196; Torell, p. 64. *L. pomarina*, Malmgren, 1863, p. 116. *Stercorarius pomarinus*, Id. 1864, p. 411.

As Dr. Malmgren remarks, Scoresby states that he observed two species of Skuas in Spitsbergen; but the name he uses for the less common kind leaves it doubtful whether he meant the Pomatorhine or the Long-tailed Skua. Ross speaks positively as to a single example having been seen during Parry's voyage. This flew past the boats in lat. 82° N. As I have previously stated, some of our party in August saw a bird in Sassen Bay, which Mr. Wagstaffe, who was present, described to me as having the form of tail which is so unmistakeably characteristic of the adult *Stercorarius pomatorhinus*; and when, between Bear Island and the Norwegian coast, we saw many examples of this species, he recognized them at once as being the same as the bird he had previously told me of. A week or two later Dr. Malmgren, on his passage home, found it equally plentiful in much the same latitude. No specimen, that I am aware of, however, has yet been procured in Spitsbergen.

14. *STERCORARIUS PARASITICUS* (L.); G. R. Gray, List B. Br. Mus. (1844), pt. iii. p. 167, exempl. *a*; Evans and Sturge, p. 172; Malmgren, 1864, p. 390. "Struntjager," Marten, p. 87, tab. L. fig. *d*. *Larus parasiticus*, Phipps, p. 187; Scoresby, i. p. 534. *Lestris parasiticus*, Ross, p. 196. *Stercorarius cepphus*, Richardson, F. B.-A. ii. p. 432, note? *Lestris parasitica*, Torell, p. 65; Malmgren, 1863, p. 105.

This bird is quite as common in Spitsbergen as I have seen it elsewhere, except among the Loffoden Islands. Parry's Expedition met with it on their journey over the ice, but not north of lat. $82^{\circ} 2'$ N. Dr. Malmgren found it breeding on the small islets near the coast, and once on the mainland. It was also, he says, very common on Bear Island. I never saw in Spitsbergen an example of the whole-coloured race or variety, on which was founded the *Stercorarius richardsoni* of Swainson; and I believe Dr. Malmgren's much greater experience is the same. He, however, remarks that the Spitsbergen specimens differ from those of Scandinavia by having a notably smaller bill, a blacker back and head, with a broad ashy-grey band across the upper part of

the breast. I have not a Norwegian example with which to compare my Spitsbergen one (selected, I may say, from a good many we shot); but this latter is absolutely identical in every point that I can see, most assuredly in those specified by Dr. Malmgren, with a specimen I long ago received from the well-known Mr. R. Dunn in the Shetlands.

That the authors of the 'Fauna Boreali-Americana' were very much puzzled (as well they might be) with the different species of Skuas there can be no doubt. I think that the *S. cephus* from Hecla Cove, described, as above quoted, as a new species, must be referred to this, the commonest of all the Skuas.

15. STERCORARIUS LONGICAUDUS, Vieillot. *Lestris parasitica*, Sw. and Rich. F. B.-A. ii. p. 430. *Stercorarius cephus*, G. R. Gray, List B. Br. Mus. p. iii. p. 167, exempl. a. *S. buf-foni*, Malmgren, 1864, p. 391.

In mentioning an example of this species shown me by Dr. Malmgren, I spoke of it as "a new addition to the Spitsbergen avifauna." This is not the case. Specimens brought from that country are recorded in the 'Fauna Boreali-Americana,' and one contained in the British Museum is entered in the list published by Mr. G. R. Gray in 1844. Dr. Malmgren's bird was shot on the 12th July, near the Russian hut in Advent Bay where I first had the pleasure of meeting him. He observed the species on two other occasions, both times in Ice Sound. Whether this bird breeds in Spitsbergen I do not know.

16. PROCELLARIA GLACIALIS, L.; Phipps, p. 186; Scoresby, i. p. 528; Ross, p. 196; G. R. Gray, List. B. Brit. Mus. (1844) pt. iii. p. 162, exempl. h; Evans and Sturge, p. 168; Malmgren, 1863, p. 106; *Id.* 1864, p. 393. "Mallemucke," Marten, p. 93, tab. N. fig. c; A. R. Martin, K. Vetensk.-Acad. Handl. xx. tab. 3, p. 94.

This is another of the birds which were found at the northernmost latitude attained by Parry's Expedition. It is very abundant all round Spitsbergen, so far as my information goes. Dr. Malmgren found it breeding in thousands on the north side of Brandywine Bay, lat. 80° 24' N. It breeds besides, but in smaller numbers, on the Alkenhorn, whence, as I have said, I have an

egg. Dr. Malmgren was good enough to present me with an egg from Bear Island, where it also breeds plentifully*. Fulmars vary in size not inconsiderably; but I see no reason to believe in the existence of a second species, at least not in the northern hemisphere. Anton Rolandson Martin (who must not be confounded with Friedrich Marten) in 1758 visited Spitsbergen; but the only result of his voyage I can discover is a very good description of this bird and its habits, though he does not seem to have been quite clear about its synonymy†.

17. *BERNICLA BRENTA*, Steph.; Evans and Sturge, p. 167; Malmgren, 1864, p. 394. "Red Gees," Marten, p. 97. *Anas bernicla*, Scoresby, p. 527; Ross, p. 196. *Anser bernicla*, Torell, p. 60; Malmgren, 1863, p. 106. *A. leucopsis*, Torell, p. 60?; Malmgren, 1863, p. 107? *Bernicla leucopsis*, *Id.* 1864, p. 395?

In Parry's Expedition, on the 16th June, a nest of this bird, with two eggs, was brought on board from Ross Islet, lat. 80° 48' N.—perhaps the most northern land ever visited by man. It was then also seen in large flocks about Walden and Little Table Islands. Dr. Malmgren found it breeding on the Dépôt Holm, and also on the shore of the mainland in Treurenberg Bay, the latter fact proving Prof. Torell's remark, that it only breeds on islets, to be an imperfect generalization. Messrs. Evans and Sturge, to whom I am indebted for specimens of its eggs, found it breeding on the South Cape Islands. One of our party killed a young bird, hardly able to fly, on Round Island.

As is well known, the name *Anas* or *Anser bernicla* has been applied by some writers to the Brent, and by others to the Ber-

* The very limited number of breeding-places of the Fulmar forms a curious contrast to the extraordinary abundance of the species. In the British Islands, I believe St. Kilda is its only abode. About the year 1839 it was first found breeding on the Færoes, where it has since much increased, and now occupies several spots in that group of islands. In Iceland it has some four or five stations. Mr. Wheelwright states ('Ten Years in Sweden,' p. 402) that it breeds "in the islands off Norrland and Finland" [qu. Nordland and Finmark?]; but this is one of the statements he has loosely copied from Nilsson, and I doubt its truth, believing that the bird has no breeding-place in any part of the Scandinavian peninsula.

† Ludwig, who left me at Tromsø to return home, wrote me word that he saw a "Hav-hest" at Kolari, on the Muonio, just above its confluence with the Torneå, as he descended the former river.

nacle-Goose. This confusion it was that, I suspect, led Professor Nordenskjöld to believe that he had shot the latter (*Bernicla leucopsis*) in Bell Sound in 1858. No other observer has met with this last species in Spitsbergen; and I am therefore inclined to the opinion that a mistake has been made, and that the example obtained, which does not seem to have been preserved, was only a Brent-Goose, which seems to be numerous all round Spitsbergen, except perhaps on the east side*.

18. ANSER BRACHYRHYNCHUS, Baillon; A. Newton, P. Z. S. 1864, p. 498. *A. ferus*, Evans and Sturge, p. 172. *A. cinereus*, Torell, p. 61; Malmgren, 1863, p. 115. *A. segetum*, *Id.* 1863, p. 107. *A. segetum* v. *brachyrhynchus*, *Id.* 1864, pp. 396, 412.

I have already mentioned that, on the 13th July, I recognized in a freshly killed Goose in Dr. Malmgren's possession an example of this species, which had previously been mistaken for others by all former observers in Spitsbergen; and I am glad to find that my friend, in his last paper, partially corrects the error he had before made. That *Anser brachyrhynchus* is a species perfectly distinct and easily recognizable from *A. segetum* no ornithologist in England now requires to learn; and I should be surprised at the scepticism shown on this point by our Continental brethren, were it not that the whole genus has been so encumbered by the invention of so-called subspecies, that the real distinctions between the independent members of it have been

* It was doubtless to this species that the nest belonged which figures in a ludicrous story, told in the narrative of Lord Mulgrave's voyage by an anonymous author (Mavor's 'Collection of Voyages,' vol. xi. pp. 32, 33). A boat's crew from the 'Carcass' were sent to examine Moffen Island, when they were pursued by two bears, one of which approached very fast. The officer in command, it seems, was not distinguished for his courage, and, being very corpulent, had scarcely breath enough left to call to his men to halt. "In this critical situation he unfortunately dropped his gun, and in stooping to recover it, stumbled against a goose-nest, fell squash upon his belly into it, and had very nigh smothered the dam upon her eggs. Before he could well rise, the enraged gander came flying to the assistance of his half-smothered consort, and making a dart at the eye of the assailant, very narrowly missed his mark, but discharged his fury plump upon his nose." The men, luckily, returned and killed both his enemies, to the great relief of their commander, who does not appear to have been a shipmate of Nelson's.

frittered away, leaving the nomenclature of the different European species in a very confused state.

In Spitsbergen the Pink-footed Goose has been met with in Wide Bay, lat. $79^{\circ} 35' N.$; and probably it occurs all along the west coast. It is most numerous in Ice Sound, where, as I have said, Ludwig found a hatched-out nest, with two goslings, about midnight between the 16th and 17th July. Dr. Malmgren seems to have met with at least two nests in the upper part of the Sound, from both of which he shot the female bird. One of them, killed on the 4th July near Advent Bay, he describes fully in his last paper; and he gave one of my friends an egg from this nest, which is now in my possession. The second nest was obtained at Mittelhook, in the same Sound, on the 10th July, and the Doctor kindly presented me with a pair of its eggs. Messrs. Sturge and Evans also gave me one of the eggs they took in 1855. I have thus four very satisfactory examples of this egg, which is so extremely difficult to procure authenticated. They vary very considerably both in size and shape. According to Dr. Malmgren, the species also occurs in Hinlopen Strait and the Stor Fjord*.

The two nestlings obtained by Ludwig differ somewhat in appearance. They are both clothed in greenish-yellow down, with patches of olive on the back of the head, lore, and region of the eye, upperside of the wings, middle and lower part of the

* I take this opportunity of calling attention to the fact, that we are very ignorant as to the exact species of Goose which breeds on the islets fringing the coast of Norway, from Throndhjem northwards. I have seen the birds on many occasions; but I have never been able to handle a specimen, as the localities they frequent are most jealously guarded by the inhabitants, and no guns are allowed to be used upon them. Almost all Scandinavian naturalists, excepting Pastor Sommerfelt (*Œfver. Vet.-Akad. Förh.*, 1861, p. 86), declare that the species is *A. segetum*; but, judging from the pale grey pinions of those I have seen near me, I doubt the fact; and when I passed up the coast in 1855, I was inclined to consider it *A. ferus*. Now that I have ascertained *A. brachyrhynchus* to be the big Goose of Spitsbergen, I venture to suggest that it is also this which breeds on the coast of Norway, though, so far as I am aware, the species has not hitherto been recognized in Scandinavia; but that it must at least occur there is self-evident. If any of my readers should be visiting the extreme north of Norway, I would ask them to try and identify the species of Goose which breeds abundantly at Tamsö, in the Porsanger Fjord.

back, and the flanks; but the ground-colour of one is much darker than the other. One (the darkest) specimen, singularly enough, has on the outer edge of the middle toe and on the outer interdigital web of each foot some two or three small yellowish feathers—a fact I cannot at all explain.

19. CYGNUS, sp. ?, Malmgren, 1863, p. 116; *Id.* 1864, p. 411.

A walrus-hunter assured Dr. Malmgren, on his former voyage, that two years before he had shot a Swan on a lake near the Stor Fjord; and he was also told by Captain Kuylenstierna that, in the expedition of 1861, a Swan was seen at the end of August in Advent Bay. These birds were probably accidental visitors from Nova Zembla, where, according to Von Baer, a Swan breeds in large numbers; but it is very doubtful whether the species be *C. musicus* or *C. minor*.

20. HARELDA GLACIALIS (L.); Torell, p. 59; Malmgren, 1863, p. 108; *Id.* 1864, p. 399. *Anas glacialis*, Temminck, Man. d'Orn. 1815, p. 558.

This bird is one of the few regular visitants to Spitsbergen which none of our party observed. It seems to be scarce there; but it occurs even as far north as the Dépôt Holm, lat. 80° N., where Dr. Malmgren, in his former voyage, saw a female bird. Its mate had been killed previously, and is now in the Stockholm Museum. The Doctor remarks that this specimen has the bill rather smaller than Scandinavian examples, and somewhat differently coloured. He also saw a pair in Kobbe Bay, on the 28th May, 1861, and last year on the 1st August met with a family party of five on a small pool of fresh water on one of the Horn Sound Islands.

21. SOMATERIA MOLLISSIMA (L.); G. R. Gray, List B. Brit. Mus. (1844) pt. iii. p. 141, exempl. *d.*; Evans and Sturge, p. 167; Torell, p. 57; Malmgren, 1863, p. 109. "Mountain Duck," Marten, p. 90, tab. M. fig. *c.* *Anas mollissima*, Phipps, p. 186; Scoresby, i. p. 527; Ross, p. 197. *Somateria spectabilis*, Beechey, *op. cit.* p. 100? "*Somateria mollissima* (L.), var.," Malmgren, 1864, p. 399.

Sufficiently numerous all around Spitsbergen, but becoming

scarcer, according to Dr. Malmgren, towards the north. However, that gentleman, on the 15th July, 1861, observed at Shoal Point, lat. $80^{\circ} 10' N.$, flocks of hundreds of male birds, which seemed to be on their way *still further north*—a very remarkable fact. This species seems to be decreasing in numbers, owing to the persecution it undergoes.

Scoresby remarks on the small size of the Greenland Eiders; and, in his last publication, Dr. Malmgren has some remarks on the same subject. He gives a table showing that the dimensions of the bill in four examples from Spitsbergen are constantly less than in three from the Baltic. There is, however, no difference in the plumage of the birds from the two localities. He states that examples procured by Herr Meves on the coast of Holstein in winter resemble those from Spitsbergen more nearly in the form of the bill, but differ by being larger in body. I, unfortunately, did not bring home any Spitsbergen specimens; I am therefore unable to test these observations.

The so-called King-Duck of Beechey, as Dr. Malmgren justly remarks, is the present, and not the next species.

22. *SOMATERIA SPECTABILIS* (L.); Torell, p. 57; Malmgren, 1863, p. 109; *Id.* 1864, p. 401. *Anas spectabilis*, Temminck, Man. d'Orn. 2nd ed. 1820, p. 851; Schrader, Journ. f. Orn. 1853, p. 322.

This species has several times been noticed in Spitsbergen—by Professor Lovén in Ice Sound in 1837, by Professor Sundevall in Bell Sound the following year, and by Professor Nordenskjöld, who killed two examples on the south-east coast, in 1858; but it is certainly not of common occurrence there as most writers have asserted. I very much question if it breeds in the country, and it has not been met with further north than Ice Sound, lat. $76^{\circ} 14' N.$, where last year I believe I saw a young drake flying on July 22nd; and Ludwig, the same day, was in unsuccessful pursuit of three birds which were, I suspect, of this species. Dr. Malmgren, however, had better luck, and showed me one which was shot out of a small flock, at the beginning of the month, in Safe Haven. Another little flock was also observed by him in August on the Horn Sound Islands; but in the south-east harbour of Bear Island, on the 18th–19th June, he saw

a very large flock, consisting of hundreds of ducks and young drakes, with only one or two old drakes among them all. They do not appear to breed there.

23. *COLYMBUS SEPTENTRIONALIS* (L.); Ross, p. 197; Torell, p. 61; Malmgren, 1863, p. 111; *Id.* 1864, p. 402. *C. glacialis*, Phipps, p. 187; Scoresby, i. p. 533.

Breeds as far as the Seven Islands, lat. $80^{\circ} 45' N$. Eggs from the Dépôt Holm and other places have been obtained by the Swedes. A young bird was found by our party on one of the Thousand Islands; and I saw a pair of old ones on Russø, which had evidently a nest not far off. Thus it would seem pretty generally, though sparingly, distributed throughout the whole country. The Red-throated Diver probably feeds its young, according to Dr. Malmgren, on a species of *Apus*, which he found in plenty in freshwater pools on the Stor Fjord.

24. *CEPPHUS MANDTI* (Lichtenstein). "Pigeon" or "Pigeon-diver," Marten, p. 79, tab. L. fig. b. *Colymbus grylle*, Phipps (nec Linn.), p. 186; Scoresby, i. p. 532. "*Grylle scapularis*, Leach," John Ross, Voy. Baffin's Bay (1819), App. 2. p. li? (ex Grœnlandia). *Uria mandtii*, Licht. Verz. d. Doubletten, (1823) p. 88, no. 926; Keyserling & Blasius, Wirbelth. Europ. (1840) p. xcii; Torell, p. 62. *Uria glacialis*, Brehm, Lehrb. (1824) pp. 924, 1008. *Uria grylle*, Ross, p. 197; G. R. Gray, List B. Brit. Mus. (1844) pt. iii. p. 157 (*partim*); Evans and Sturge, p. 169; Torell, p. 62; Malmgren, 1863, p. 111. *Uria grylle* v. *glacialis*, Gaimard, Voy. en Scand. Atlas, livr. iv. pl. —; Malmgren, 1864, p. 403. *Uria grylle mandtii*, Schlegel, Rev. Crit. (1844) p. cvii. *Cepphus grylle*, A. Newton, P. Z. S. 1864, p. 495.

In 1823, as above cited, Lichtenstein described a new species of Black Guillemot, in the following words:—" *Uria Mandtii* affinis *Gryllæ*; differt potissimum remigibus secundariis multo longioribus apice albis. Rostrum gracilius, cauda, tarsi, digiti, pro mole longiores. Longit. $12\frac{1}{2}$ " ;" and refers for further particulars to Mandt's 'Dissertatio de itinere Grœnlandico' (p. 30), a work I have not been able to see.

Now, though the keen eye of the Berlin Professor told him that the specimen before him was distinct from the *Colymbus*

grylle of Linnæus, yet it so happened that he only caught one of the chief points really diagnostic between the two species, namely, the size of the bill and lower limbs,—his first character, drawn from the white tips of the secondaries, not being constant, as Dr. Malmgren has well shown, but arising in some cases probably from the age of the feathers. However, there exists a third and, so far as my experience goes, an unfailing means of differentiating *Cepphus mandti* from *C. grylle*. This lies in the feathers which form the conspicuous wing-spot. In the more northern form from Greenland and Spitsbergen they are *pure white at the base*, even in immature birds, while in the true *C. grylle*, from our own islands, Iceland, and Norway, with its stouter bill, these feathers are always *black at the base*, forming an entirely, or almost entirely, concealed band across the wing-spot. In *C. columba*, from Western America and Eastern Asia, we have this band much more developed, so as to be in all cases plainly visible, and towards its outer end it often becomes enlarged so as to meet the black of the anterior point of the carpus. In *C. carbo* again, and in what is perhaps another species*, the white spot entirely disappears. Thanks to Mr. J. Hancock and my friends Messrs. G. G. Fowler and Shepherd, I have had the opportunity of comparing with my own fair series of specimens from Spitsbergen a not inconsiderable number of examples of Black Guillemots from Greenland, Iceland, our own islands, and Norway. The character afforded by the wing-patch is quite constant in all these birds, according to the locality. The difference in the lengths of the bill and legs seems subject to some variation; and as I do not think any great dependence can be placed upon

* I refer to a specimen in the British Museum, marked "*Uria carbo*," but which wants the white eye-patch of that species, and is entirely black all over. This specimen was bought of Mr. Argent, and said to come from Iceland, which is just possible, since Faber speaks of an entirely black variety of *Uria grylle* from that island (Isis, 1827, p. 639). What, and when described, is "*Uria unicolor*, Benicken"? I cannot trace it back beyond a note of Brehm's (Isis, 1826, p. 988). Under the name of *Uria motzfeldi* Benicken described a Guillemot entirely black, but differing from *U. grylle* by being much larger (Isis, 1824, pp. 888, 889). The British Museum bird is much the same size as that species.

them, I refrain from encumbering this paper with a table of their comparative dimensions. In coming to a conclusion on this point also, I have also to acknowledge the kind assistance I have received from Mr. G. R. Gray. I here subjoin a very brief diagnosis of the four forms I have above named, taken from adult birds in their breeding-plumage.

A. *Macula alari alba.*

- (1.) *C. mandti* (Licht.), tectricibus alarum ad radices albis.
- (2.) *C. grylle* (Linn.), tectricibus alarum fascia nigra celata.
- (3.) *C. columba* (Cassin)* (*Cepphus columba*, Pallas, *partim*), tectricibus alarum fascia nigra conspicua.

B. *Alis totis nigris.*

- (4.) *C. carbo*, Pallas, "orbitis albis, basi rostri alarumque cinerascens" (Zoogr. R.-As. ii. p. 350).

Mandt's Dovekie is, with the exception of *Fratercula glacialis*, the least numerous of the *Alcidae* in Spitsbergen; but it is plentiful enough, for all that. Dr. Malmgren states that it breeds, in company with its allies, on the cliffs. The only eggs I procured were taken by one of our crew, who said they were lying on a low rock quite exposed, and not in a hole as I believe is always the case with those of our Black Guillemot; but they closely resemble those of that bird, and, from what I afterwards observed on Russö, I am inclined to think it also has the same mode of nidification. I cannot discover from Dr. Malmgren's paper which form it is that inhabits Bear Island; and this is a point to which I hope future voyagers will pay attention. A great many of the Dovekies seen about Spitsbergen have all the appearance of being barren birds; and these often have the tips of their secondaries weathered, a fact which led Lichtenstein and subsequently Brehm to regard this accidental circumstance as a real character. Such specimens also generally have dusky tips to the white feathers of the upper wing-coverts, and therefore seem to be birds of the preceding year

* Pallas (Zoogr. R.-A. ii. p. 349) regards the black-banded birds from the Pacific as varieties; and his diagnosis of the species is not applicable to them. His, therefore, cannot be regarded as the first description of this form; and accordingly I quote Mr. Cassin (Baird's B. N. Am. p. 912) as the authority for the same.

which have not fully moulted off their nestling-plumage. The same may, no doubt, be observed in the true *C. grylle*; and in this stage of plumage, one or other of the two forms (it is impossible to say which) has been the original of Brehm's *Uria meisneri*.

25. *URIA BRUENNICHI*, Sabine; Evans and Sturge, p. 168; Torell, p. 62. "Lumb," Marten, p. 80, tab. M. fig. *a*. *Colymbus troile*, Phipps, p. 187; Scoresby, ii. p. 532. *Alca torda*, Ross, p. 198; Gaimard, Voy. en Scand., Atlas, livr. ix. pl. —. (*adult.*), livr. x. pl. —. fig. sup. (*pullus*); Torell, p. 63! *A. bruennichii*, Malmgren, 1863, p. 111. *A. troile* v. *bruennichi*, *Id.* 1864, p. 404. *Uria arra*, G. R. Gray, List B. Br. Mus. pt. iii. p. 156, exempl. *b.*; A. Newton, P. Z. S. 1864, p. 495.

The above list of synonyms will show the difference of opinion that has existed respecting the species, which, with perhaps one exception, is the most common in Spitsbergen. That the older voyagers should be mistaken is not surprising, and even Sir James Ross may be pardoned for his error; but the same excuse cannot be made for the French *savans*, under whose direction the adult bird was figured in their 'Atlas' and mis-called *Alca torda*, a species which later investigation has failed to detect in the country.

Dr. Malmgren considers this to be the most abundant species of the Spitsbergen Ornis, and I am quite ready to yield to his far greater experience, though, for my own part, I should have given that place to *Mergulus alle*; but there cannot be much to choose between them. It breeds as far to the north as Walden Island, lat. 80° 38' N.; but, according to Sir James Ross (who mistook it for the Razorbill), it was not seen beyond that and Little Table Island. Its food is chiefly crustaceans; but, according to Dr. Malmgren, it also lives a good deal on fish. He states that by the end of August all the breeding-places on the north coast were already deserted; and I have stated that towards the same time the birds, which had previously thronged the Alkenhorn in such countless numbers, were rapidly quitting it. To the eastward of South Cape I do not think we saw the species at all.

In his voyage last year, Dr. Malmgren found *Uria troile*

breeding on Bear Island in incredible numbers, intermixed with occasional examples of the so-called *U. lacrymans*, which I quite agree with him in considering to be only a variety of the Common Guillemot. I, however, as strongly dissent from his opinion in regarding *U. bruennichi* in the same light, the differences between it and *U. troile* being, as is admitted by the great majority of naturalists, very striking. He saw this latter, breeding only on Bear Island, but is inclined to think Brännich's Guillemot may also inhabit the more lofty cliffs there.

26. *MERGULUS ALLE* (L.) ; Torell, p. 62 ; Malmgren, 1863, p. 112 ; *Id.* 1864, p. 408. "Rotge," Marten, p. 85, tab. M. fig. b. *Alca alle*, Phipps, p. 186 ; Scoresby, i. p. 528. *Uria alle*, Ross, p. 197. *Arctica alle*, Evans and Sturge, p. 168.

This pretty little bird is, as has been said, numerous almost beyond belief on the greater part of the coast. Parry's Expedition met with it as far to the north as the party travelled, and on their return in August found it in great numbers between lat. 81° and 82° N. We did not see it in the Stor Fjord, nor did Dr. Malmgren. Its breeding-places, though at a less height than those of its allies, are still far from being easily accessible ; but I have mentioned one to within a few feet of which I was able to climb and superintend the capture of the young. Mr. Lamont, in his entertaining work, 'Seasons with the Sea-Horses,' states his opinion (p. 93) that it is the mutings of this bird which produce the well-known "red snow." I do not at all agree to this ; for, setting aside the fact that the cause of that singular appearance has been fully determined, and that it occurs in regions where there are no birds of the kind, the mutings of the Rotche, or Little Auk, are like anchovy-paste, while the red snow, or such of it as I saw, is of an entirely different colour, being a dull crimson.

27. *FRATERCULA GLACIALIS* (Leach) ; Stephens, Gen. Zool. xiii. pt. i. p. 40, pl. 4. fig. 2 ; G. R. Gray, List B. Brit. Mus. (1844) pt. iii. p. 153, exempll. a, b. ; Evans and Sturge, p. 172. "Diving Parret," Marten, p. 89, tab. K. fig. c. *Alca arctica*, Phipps, p. 186 ; Scoresby, p. 527. *Mormon glacialis*, Naumann, Isis, 1821, p. 783, tab. vii. fig. 2. (head only). *M. fratercula*,

Ross, p. 198 ; Torell, p. 62 ; *M. arcticus*, Malmgren, 1863, p. 113 ; *Id.* 1864, p. 409.

In the former portion of my paper* I expressed my belief that this bird had been with propriety separated from *Fratercula arctica*, and promised to say more respecting the comparative dimensions of the two. This I can do in the shortest space by presenting the following Table of Measurements :—

		Altitudo rostri ad basin.	Longitudo rostri			Longitudo		
			a fronte.	ab ang. bas. maxil. infer.	a mento.	tarsi.	dig. med. cum ung.	ala a carp.
<i>F. glacialis</i>	Ice Sound, Spits- bergen, July 1864.	1.8	2.23	1.37	1.6	1.12	1.92	6.87
"		1.6	2.08	1.42	1.58	1.6	1.96	6.95
"		1.7	2.13	1.3	1.52	1.15	1.95	6.8
<i>F. arctica...</i>	Iceland (Mr. G. G. Fowler).	1.45	1.9	1.26	1.34	1.02	1.81	6.32
"		1.4	2.	1.32	1.4	1.1	1.78	6.47
"		1.3	...	...	...	.97	1.68	5.66
"	Wales (Mr. J. Baker).	1.42	1.74	1.13	1.22	1.	...	6.22
"		1.43	1.81	1.16	1.29	.99	1.6	5.98
"		...	1.76	1.18	1.32	1.08	1.71	6.03
"		1.52	1.82	1.24	1.34	.99	1.75	6.22
"		1.46	1.89	1.27	1.37	.9	1.73	5.82
"		1.38	1.81	1.3	1.4	.99	1.78	6.14
"		1.41	1.82	1.22	1.34	.88	1.55	5.8
"		1.35	1.74	1.22	1.35	.85	1.51	5.7
"		1.41	1.75	1.18	1.32	.97	1.62	5.87
"		1.43	1.77	1.18	1.3	.96	1.69	5.8
"	Isle of Wight (Mr. Bond).	.95	1.67	1.23	1.27	.99	1.58	6.02

I may mention, however, that when I declared myself so strongly on the subject, I had not seen the two examples from Iceland, which I owe to the kindness of Mr. G. G. Fowler. Therefore, though still holding to the opinion I then expressed, I must admit that the case is less free from doubt than I had thought it. Of the remaining dozen specimens of *F. arctica* detailed above, eleven are adults in breeding-plumage from the coast of Wales, for the

* I then stated I believed *F. glacialis* had not been figured. This I find to be an error, as there is a very tolerable representation of it in Stephens's work above cited. Marten's figure is, naturally, of no account; and the plate, in the 'Isis,' referred to, only shows the head—certainly, however, the most important part.

opportunity of examining which I am indebted to Mr. Baker, of Cambridge. The twelfth is the bird killed in the Isle of Wight, and recorded by Mr. A. G. More in the 'Zoologist' for 1860 (p. 6858), which, as noticed in the 'Ibis' for 1860 (p. 419), was pronounced by Mr. G. R. Gray to be an example of *F. glacialis*; but in that opinion I do not coincide. The specimen is now in the possession of Mr. F. Bond, who was good enough to allow me to make a minute examination of it.

It is to be observed from the above Table, that though, in the case of one single measurement, a specimen of *F. arctica* may occasionally approach the smallest of the examples of *F. glacialis* (which, I may remark, was one picked out as the very smallest of all we shot), yet this excess seems always, except in the case of the Iceland birds, to be attained at the expense of other measurements. This fact, taken in combination with the very singular form of the bill, which is well represented in Mr. Wolf's plate (Pl. IX.), and the apparently precise geographical distribution of the two birds, induces me to regard them as distinct forms—at any rate, quite as much so as are *Loxia pityopsittacus* and *L. curvirostra*. Scoresby mentions in a note (i. p. 528) that Swainson, on comparing a drawing of a Spitsbergen with a British Puffin, "considered it as a distinct species." I do not feel so sure of the assertion of Stephens (*loc. cit.*), that the colours in the more northern bird are "more intense."

The Northern Puffin is the least common of the *Alcidæ* in the Spitsbergen waters. Indeed, when the extraordinary abundance of at least two of the other species is taken into account, it may almost be called rare. Ross, however, couples it with the last in his statement that it was found in considerable numbers on Walden and Little Table Islands; but, on the other hand, Dr. Malmgren says that this was not the case according to his experience. He saw several examples at the beginning of September near Norway and Amsterdam Islands; and in June some were shot in Treurenberg Bay. In his last voyage he also found Puffins at Bear Island, but in no great numbers. We observed them several times at a considerable distance from land; but they were most plentiful, as I have said, about Sassen Bay, some thirty or forty miles from the open sea. Dr. Malm-

gren states that he can see no difference between specimens from Spitsbergen and others from Iceland and Finmark, but that examples killed near Gottenburg and in the Færoes are decidedly smaller and have lower bills. These, no doubt, are identical with our British Puffins.

And now having concluded this list of the Birds of Spitsbergen, I must offer a few remarks on some other species which have been stated to occur there. Mr. Selby (Ill. Brit. Orn. ii. p. 433) ascribed it as a locality for *Alca impennis*; but that I was, by his kindness, long ago able to show in this Journal to be a mistake (Ibis, 1861, p. 376). Dr. David Walker, in his "Notes" on the Zoology of the 'Fox' Expedition*, says that *Plectrophanes lapponica* and *Colymbus arcticus* are found there; but, in the absence of any authority for the assertion, they must on negative evidence be rejected. I do not think it necessary to particularize the various species which egg-dealers have announced as breeding in Spitsbergen; their names can be easily supplied by any of my readers who will call to mind the various "British" birds whose *incunabula* we know the least of. But I must notice the very circumstantial statements of Sir James Ross, respecting *Xema sabinii* and *Rhodostethia rossi*. Not a trace of either of these remarkable birds has occurred to Dr. Malmgren, who has thoroughly explored so large an extent of the country, and especially the very localities where they are said to have been met with. He accordingly excludes them (and, I think, most properly) from his list, saying that the young of *Rissa tridactyla* was most probably taken for the first, and *Sterna macrura* for the second. Yet it is incumbent upon me to remark, because he has omitted to do so, that in the 'Fauna Boreali-Americana' (vol. ii. p. 428) General Sabine is stated to have "killed a pair" of *Xema sabinii* "at Spitsbergen," and that with regard to *Rhodostethia rossi* we have the evidence of two other independent observers. Granting, as I do unconditionally, that Lieut. Foster in Hinlopen Strait made the mistake suggested by Dr. Malmgren, we have yet the distinct testimony of Ross himself, the discoverer of this beautiful species, that he saw examples of it when on that celebrated

* Journal of the Royal Dublin Society, July 1860.

journey over the ice—testimony moreover which is confirmed by that careful observer Sir Edward Parry himself (Narrative, &c., pp. 81, 110). Though Ross's blunder with regard to the Razor-bill shows, as Dr. Malmgren truly says, that he was not a skilled ornithologist, yet it is not easy to see how he should have made such a mistake in this instance; and it may still be that this extremely rare bird inhabits the circumpolar regions, and that it really was seen on that occasion. May the question speedily obtain a solution by the organization of a properly equipped expedition to explore those solitudes!

Magdalene College, Cambridge,
September 1865.

XL.—Recent Ornithological Publications.

1. ENGLISH.

WE are indebted to the kindness of Mr. G. R. Gray for a copy of his 'Catalogue of British Birds'*, the existence of which, though it bears the date 1863 on its title-page, has been, until a few weeks past, entirely unknown to us, and, we believe we may add, to almost all our ornithological friends. It would be vain to speculate on the causes which for nearly two years have kept this useful volume in seclusion. It has long been known that the Zoological Department of the British Museum received but a very scanty portion of the consideration it deserved at the hands of those who chiefly direct the whole establishment; but we never expected to find the labours of one of their oldest officers would be so entirely ignored as in this instance they appear to have been. Of the merits of the work we need scarcely speak; for all our readers are acquainted with the painstaking accuracy that distinguishes all Mr. George Gray's synonymatic catalogues; and this one is in reality a second edition of his well-known 'List,' which was printed in 1850, with such additional information as the author thinks necessary. Some slight slips there are, as, for instance, the statement (p. 244) that the White-winged Black Tern is "found in most parts of

* Catalogue of British Birds in the Collection of the British Museum. By George Robert Gray, F.L.S., F.Z.S., &c. London: printed by order of the Trustees, 1863. 8vo. pp. 248.